AN

INAUGURAL DISSERTATION

ON THE

INFLUENZA.

SUBMITTED TO THE PUBLIC EXAMINATION

OF THE

FACULTY OF PHYSIC,

UNDER THE AUTHORITY OF THE

TRUSTEES OF COLUMBIA COLLEGE,

IN THE

STATE OF NEW-YORK,

WILLIAM SAMUEL JOHNSON, LL. D. President;

FOR THE DEGREE OF

DOCTOR OF PHYSIC,

ON THE SIXTH DAY OF MAY, 1794.

By PETER IRVING,

Citizen of the State of New-York.

Maxima pars hominum morbo jactatur eodem.

HORACE.

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TO

His Excel. GEORGE CLINTON,

Governor of the State of New-York;

Whoſe long and faithful Services to his Country,

Whoſe ſteady Attachment to the Cauſe of Liberty,

AND,

Whoſe Virtues as an Individual muſt endear him to every American:

THIS

DISSERTATION

Is inſcribed,

With the warmeſt Sentiments of Reſpect and Eſteem,

By his moſt obedient Servant,

The AUTHOR.

WITHDRAWN FOR EXCHANGE
N.L.M.

TO

JOHN BROOME, Prefident,

AND

ISAAC STOUGHTENBURGH,
JOHN CAMPBELL,
THEOPHILUS BEEKMAN,
GABRIEL FURMAN,
GEORGE JANEWAY,
NICHOLAS CARMER,
FREDERICK STYMETS,
ROBERT BOWNE,
WHITE MATLACK,
NATHANIEL HAZARD,
ROBERT LENOX,
Dr. MALACHI TREAT,
Dr. SAMUEL BARD,

Who compofe the Committee of Health.

GENTLEMEN,

THE firm and determined manner in which you executed the arduous truft lately confided to you, and the fervice you have rendered the community by, in all probability, preferving this city from the dreadful calamity with which a neighbouring one was fo lately afflicted, deferve the grateful acknowledgements of your

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your fellow-citizens: while your humanity, in tempering neceſſary ſtrictneſs with compaſſion, and preſenting the moſt timely and eſſential aſſiſtance to the diſconſolate ſufferers, enſure you their eſteem.

Emboldened by the numerous marks of politeneſs and attention which I received while ſerving under your direction, I have taken the liberty of ſoliciting a renewal of your patronage, and of addreſſing to you this trifling production, which will need all your candour and all your indulgence.

It is with pleaſure that I confeſs myſelf under peculiar obligations to one member of your reſpectable body-- Dr. MALACHI TREAT; not only for the information I have received from him in the ſcience of medicine, but alſo for the many teſtimonies of his friendſhip which I have repeatedly experienced.

To merit, gentlemen, a continuance of your approbation, will ever be my higheſt wiſh.

I am,

With the greateſt reſpect,

Your much obliged ſervant,

The AUTHOR.

PREFACE.

PREFACE.

THE difficulties under which a young man labors, who writes for public inſpection, are numerous and diſcouraging; but the Medical Graduate is ſurrounded by peculiar diſadvantages. Having as yet formed none but undigeſted opinions, the reſult of a ſlight, and, at beſt, but ſuperficial knowledge of medicine; opinions of which a few years increaſe of information may perhaps render him aſhamed; he is obliged to expoſe them to the view of the public, who poſſeſs no other criterion by which to judge of his abilities.

Agreeably, however, to the regulations of the Univerſity, I here ſubmit to the peruſal of my fellow-citizens the haſty production of a very few days; truſting that, when all circumſtances are conſidered, it will be received with indulgence.

A

DISSERTATION

ON THE

INFLUENZA.

IT is an old and well eſtabliſhed adage, that cuſtom reconciles all things. The univerſal prevalence of evil has long ſince habituated the world to its uncomfortable effects. Diſeaſe itſelf, though always an unwelcome viſitor, has become an old acquaintance; and thoſe complaints, not generally fatal, which are moſt common, are at length ſo familiariſed to our ideas by the frequency of their occurrence, that while abſent, they are rarely dreaded, and when felt, are commonly diſregarded.

Among diſeaſes of this deſcription, to which we are moſt accuſtomed, may *catarrh* be reckoned; and as it not unfrequently lays the foundation of diſorders of a more ſerious and alarming nature, it merits the

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ſtricteſt attention, notwithſtanding the neglect it too often, and indeed almoſt always receives. From the ſlighteſt view of the cauſes which induce catarrh, it appears evident, that it has not lately commenced its exiſtence, but that mankind have ever been ſubject to its evils, ſince they were firſt expoſed to viciſſitudes of cold and heat.

Syſtematic writers have divided it into two ſpecies.

1. The ordinary catarrh, or common cold.
2. The contagious catarrh, commonly known by the term Influenza.

To the conſideration of the latter I mean at preſent to confine myſelf.

The influenza extends over vaſt tracts of country, and univerſally attacks the inhabitants of thoſe places in which it prevails.

The characteriſtic ſymptoms are an increaſed diſcharge of mucus from the ſchneiderian membrane, accompanied with a fever of a contagious nature.

The accounts we have received of its appearance as an epidemic, extend as far back as the earlieſt ages of medicine; it has ſince frequently recurred, and has always been attended with ſimilar ſymptoms, though deſcribed under very different names. It was more univerſal in Europe in 1781 and 1782 than it had ever been known before, and was then ſuppoſed to have been brought from the Eaſt-Indies to Ruſſia, and thence to have paſſed to every

part

part of Europe in ſucceſſion.* In 1789 it appeared in the iſland of Jamaica; and in the autumn of 1790 the inhabitants of New-York were pretty ſeverely affected with it.

It ſeemed to paſs over the country without obſerving any particular direction,† allowing few to eſcape its attacks; and returned in the ſpring of 1791 with unabated violence. Its progreſs was rapid, and though an immenſe number of perſons were affected, the termination was very rarely fatal.

In the autumn of 1793 the influenza was again obſerved in this place, with ſymptoms ſimilar to thoſe which marked its former occurrence.‡ The ſame perſon was liable to be affected every time of its appearance, and ſome experienced two or three attacks in the courſe of the ſame epidemic. Children and aged perſons, in Europe as well as America, were peculiarly exempt.§

The diſorder was moſt ſevere in thoſe of bad habits and impaired conſtitutions. The ſymptoms varied ſo much,

* Duncan's Inaug. Diſſert. De Catarrho Epidemico.

† This was alſo obſerved in the influenza of 1782. "It obſerved no regular progreſſion from any one point of the compaſs to another." Med. Tranſ. vol. iii. p. 61.

‡ By a gentleman of information from Demerara, I am informed, that in 1790 and 1793, the influenza made its appearance in that place alſo—that the diſorder was ſevere, but the event very rarely unfavourable.

§ Ruſh's Medical Obſervations and Inquiries, vol. ii. p. 252.

"Out of 700 boys in Chriſt's Hoſpital, only 14 had it, and they in the ſlighteſt manner." Med. Tranſ. vol. iii. p. 55.

much, both in the manner and order in which they occurred, that an accurate enumeration of them is extremely difficult. It uſually came on with cold ſhivering, alternating with ſenſations of heat; pain or ſoreneſs in all the limbs, with a diſinclination to motion; obtuſe pain in the forehead, dizzineſs, and vertigo; loſs of appetite, nauſea, and frequently vomiting. To theſe ſucceeded a ſenſe of heat, and fulneſs in the noſe, in moſt caſes, and ſometimes epiſtaxis. The eyes became ſtiff and ſore, and a diſcharge of a thin acrimonious fluid ſoon took place from both noſe and eyes, followed by ſneezing and cough. The cough was often one of the primary ſymptoms: it was generally at firſt dry; but as the diſeaſe advanced, was attended with a copious expectoration. It was accompanied with difficulty of breathing, unuſual ſenſation of heat in the mouth and fauces, hoarſeneſs, frequently an inflammation of the throat, and conſequent difficult deglutition. The ſkin was dry and hot; tongue commonly white and moiſt, without much thirſt; ſometimes a diarrhœa was preſent, at other times an inclination to coſtiveneſs, but in general the excretions were natural. A great variety was obſervable in the pulſe. It was, however, commonly at the commencement of the diſeaſe full and ſoft; but often became in a ſhort time ſmall and weak. There was frequently a conſiderable degree of languor, laſſitude, and depreſſion of ſpirits from the beginning.

The

The fever increaſed toward evening: in the night delirium ſometimes came on; but as morning approached a ſweat broke out, which procured a remiſſion of the ſymptoms. It ſeldom continued longer than three days, and very often not ſo long. With the fever all the other ſymptoms diſappeared, except the cough, which remained ſome time, and then decreaſed gradually in frequency and violence until it ceaſed altogether. As the diſeaſe receded, if convaleſcents expoſed themſelves to the operation of cold air, and particularly if they went abroad in cold damp weather, their complaints were often renewed with increaſed violence.

The influenza was frequently much more ſlight than is here deſcribed: many were not prevented by it from attending to their ordinary buſineſs; but in general it appeared, with ſome variation, in the form above-mentioned.

In a number of caſes, and particularly when the debilitating plan had been pretty liberally employed, all the principal ſymptoms of typhus fever took place in the advanced ſtages and toward the termination of the complaint.

Independent of the intervention of typhus fever, the diſeaſe ſometimes proves fatal, in old and aſthmatic perſons, by inducing peripneumonia notha or the catarrhus ſenilis.

It

It is alſo ſometimes attended with fatality, though in a more indirect manner, by haſtening the approach of phthiſis pulmonalis, in perſons whoſe lungs are already affected with tubercles. The cough, by agitating the lungs and exciting an inflammation in the tubercles, appears to be the principal agent in producing this effect.

Repeated and long continued catarrhal affections may perhaps induce tubercles in thoſe prediſpoſed by their form to phthiſis; but I cannot believe that the influenza alone, as has been aſſerted by ſome, has ever occaſioned it: and I am the more confirmed in this opinion by obſerving, that in pleuriſy the lungs may be affected with inflammation, and at the ſame time agitated by coughing, without any ſuch conſequence being produced.

DIAGNOSIS.

INFLUENZA, when it has continued for ſome time, may be diſtinguiſhed from all other diſeaſes, by the ſymptoms already mentioned; but in the beginning, the diagnoſis will be attended with more difficulty, for obvious reaſons.

The diſeaſes with which it is moſt liable to be confounded are common catarrh and meaſles.

As the ſymptoms of common catarrh bear a very great reſemblance to thoſe which attend influenza, conſiderable

conſiderable attention is neceſſary to make the diſtinction. They differ principally in degree. The former is, on its firſt appearance, generally unattended with fever; while, in the latter, the febrile ſymptoms almoſt always appear at the commencement of the diſeaſe, and are more violent: the attack is alſo more ſudden. The diagnoſis is not, however, of any conſiderable importance, as the mode of treatment in both is very ſimilar; and always more ſo in proportion to their reſemblance to each other; but the nature of the prevailing epidemic being conſidered, there will remain little room for doubt.

We will alſo find much difficulty in diſtinguiſhing it from the meaſles, but may ſucceed by enquiring whether the patient ever had that complaint before, and aſcertaining whether or not it prevails in the neighbourhood, and whether he has not been expoſed to the infection. If it be the meaſles, the iruption on the ſkin will ſoon afford a ſufficient diſtinction. Fortunately, in this caſe alſo, a miſtake will not be productive of any detriment, as the ſame remedies which are ſerviceable in the one are proper in the other.

PREDISPOSING CAUSES.

AS the influenza affected both ſexes and all conſtitutions with little or no diſcrimination, it appears that no particular prediſpoſition was eſſentially neceſ-

fary;

ſary; for the robuſt as well as the delicate, the healthy as well as the infirm,* were ſuſceptible of its attacks. As, however, there are ſome circumſtances which render the body peculiarly liable to be affected by diſeaſes of this nature, and diſpoſe it to be afflicted with greater violence, it will not be amiſs to point them out, eſpecially as by a little attention ſome of them may be readily avoided.

Preceding diſeaſes, by rendering the body debilitated and irritable, diſpoſe it to be operated on by contagion, and may therefore with propriety be ranked among the prediſpoſing cauſes.

Large evacuations, depreſſing paſſions of the mind, and a ſedentary life likewiſe operate by debilitating the ſyſtem.

Intemperance, particularly in the uſe of ſpirituous liquors, as alſo fatigue, has a great tendency to induce prediſpoſition---exerciſe, moderately uſed, increaſes the ſtrength of the body, and is one of the beſt tonics employed in medicine; but, when carried to exceſs, it produces that ſpecies of debility termed by BROWN *indirect*. By a ſimilar mode of operation,

* Perſons laboring under other complaints are not exempt from influenza. When it appeared at Exeter, within a week it ſeized 173 perſons in the hoſpital.

"Theſe hoſpital patients, afflicted with ſuch various diſtempers, and under the operation of the moſt efficacious medicines, were all affected almoſt at the ſame time and in the ſame manner by the influenza." Dr. Cummings' acct. Med. Obſ. vol. vi.—See alſo Ruſh's Obſ. and Inquir. vol. ii.

tion; but in more dangerous degree, ſpirituous liquors prove detrimental. We generally obſerve intemperate perſons more readily affected with contagious diſeaſes than others, and they recover with greater difficulty. Having long been accuſtomed to the uſe of large quantities of diffuſible ſtimuli, the remedies commonly employed are too feeble to be of any material advantage; and when the termination is fatal, they may, with more propriety, be ſaid to have fallen victims to their own irregularity, than to the complaints which apparently produced their diſſolution.

Influenza, approaching nearly in its nature to the ordinary catarrh, we may reaſonably infer, that thoſe cauſes which occaſion the one, will alſo have a tendency to produce the other. Accordingly, we find that thoſe who are expoſed to the night air, to the operation of cold, either alone or combined with moiſture, or to viciſſitudes of cold and heat, are more particularly and more violently affected.* Cold proves evidently debilitating, eſpecially when combined with moiſture. According to the common opinion, it is injurious not only by ſimply diminiſhing the excitement, but alſo by obſtructing the perſpiration, and determining from the ſurface to the lungs.

The manner in which cold diminiſhes the perſpiration is a ſubject of conſiderable diſpute. Dr. CULLEN ſuppoſes

* Cold, concurring with contagion, renders it more active. See Cullen's Firſt Lines, par. DCLXXX.

ſuppoſes it poſſeſſed of an aſtringent power, which, producing a diminution of diameter in the veſſels on the ſurface, allows a ſmaller quantity of perſpirable matter to eſcape. In paragraph xc. of his Practice of Phyſic, he ſays, "Beſide the ſedative and ſtimulant powers of cold, it is manifeſtly alſo a powerful aſtringent, cauſing a contraction of the veſſels on the ſurface of the body, and thereby producing a paleneſs of the ſkin and ſuppreſſed perſpiration; and it ſeems to have ſimilar effects when applied to internal parts. It is likewiſe probable that this conſtriction, as it takes place eſpecially in conſequence of the ſenſibility of the parts to which the cold is applied, will, in ſome meaſure, be communicated to other parts of the body; and that thereby the application of cold proves a tonic power with reſpect to the whole ſyſtem."

With deference to ſuch reſpectable authority, I cannot conceive cold poſſeſſed of ſo many contradictory qualities as Dr. CULLEN attributes to it. Indeed, that this apparently aſtringent power depends on its operation as a debilitant, appears to me not improbable. It is a fact, at preſent well aſcertained, that the fluids contained in the arteries are not circulated through them by the impulſe of the heart alone, but that theſe veſſels alſo poſſeſs a power of propelling their contents, ſimilar to that with which the heart is indued; and, by this mean, the circulation is carried on,

in

in the extreme veſſels, in a great meaſure independent of any vis a tergo.

This being allowed, it will readily appear that cold applied to the ſurface of the body, debilitating theſe veſſels, muſt diminiſh their power of circulating their contents; in conſequence of which the quantity paſſing through them will be leſſened, and a ſmaller diſcharge of perſpiration induced; the fluids not finding the uſual outlet at the ſkin, a determination will naturally take place to the lungs, where there is a large extent of ſurface from which they may be diſcharged. At the ſame time, in conſequence of the diminiſhed circulation in the extreme arteries, an accumulation will take place in the larger veſſels, which, proving a ſtimulus to them, and increaſing their action, will induce the train of febrile ſymptoms with which catarrh is attended

Every thing that obſtructs the perſpiration in any conſiderable degree, produces a ſimilar determination. Hence the remarkable conſent which ſubſiſts between the lungs and ſurface, a diminiſhed excretion from one being ſucceeded by an increaſed diſcharge from the other; and, on this principle, it will follow, that in affections of the lungs, *or membrane inveſting them*, which ariſe from an increaſed flow of fluid, a determination to the ſurface is one of the moſt efficacious and moſt natural remedies.

The

The operation of cold air, in producing catarrh, is alſo very ingeniouſly explained on chemical principles.

In conſequence of a diminution of temperature, the atmoſphere, which is always expanded by heat, becomes condenſed into a ſmaller ſpace, and a greater quantity than uſual is contained within a given circumference.

A perſon, breathing this condenſed air, will inhale a larger proportion of oxigene gas, or vital air, than common, which will afford an ample ſtock of materials for chemical decompoſitions and combinations.

The blood being highly oxigenated, becomes more florid and ſtimulating; the heat from the evolution of caloric, by the decompoſition of oxigene gas, is alſo increaſed, and, by theſe means, the attendant fever of catarrh is formed. Upon entering a warm room, the ſtimulus of external heat is added, and a fever more readily induced.

During the proceſs of reſpiration, the water formed in the lungs, by a union of hydrogene from the blood with oxigene, is in greater quantity than natural; but in conſequence of the accumulation of heat, it is diſcharged in the form of vapour, and the breath is apparently leſs moiſt.

This theory poſſeſſes great ingenuity and plauſibility, and has, very probably, much real merit. On any mode

mode of the operation of cold, if it is sufficient to induce fever, it will augment the violence of the influenza: as, in such cases, it acts at nearly the same time with the contagion, it is rather a concurring than predisposing cause.

EXCITING CAUSE.

WITH respect to the exciting cause, Physicians are considerably divided. The principal opinions entertained on the subject are the three following.

1st. That it depends on a peculiar state of the air, with respect to weight, moisture, or some more insensible qualities.*

2. That it is propagated by a particular contagious state of the atmosphere.†

3. That it is occasioned by contagion but only communicated, like the small pox, by intercourse with the affected, or through the medium of substances imbued with the contagion.

As a knowledge of the causes of diseases is frequently essential and always satisfactory, a more minute

* This opinion is ably and ingeniously supported in an inaugural treatise on the Influenza, by *Robert Johnston*, who graduated at Philadelphia, in 1793. His publication accidentally fell into my hands just as this dissertation was going to the press.

† The air of places in which the disease prevails, is supposed to be impregnated with the contagion which is dispersed by the winds to different parts, infecting them as it passes along.

nute inveſtigation of theſe opinions may perhaps be deemed neither impertinent nor entirely uſeleſs.

The univerſality of the complaint, the celerity with which it proceeds, and the circumſtance of perſons moſt expoſed being ſooneſt and moſt violently attacked, argue ſtrongly in favour of the cauſes exiſting in the atmoſphere Several inſtances are related in proof of this opinion, of perſons being affected ſeveral miles at ſea, who had no intercourſe with the land. But the medical ſocieties, which have made the moſt accurate inquiries into the nature of this complaint, do not conſider theſe accounts as very authentic.* Many contrary facts are alſo recorded, which prove the regularity of progreſſion which the diſorder conſtantly obſerved, and which cannot be reconciled with the opinion above mentioned. It in ſome inſtances raged in one diſtrict, while others in the neighbourhood were entirely free.† The circumſtance of perſons being affected ſooner, and with more violence, who were expoſed to the air, is not difficult to explain: thoſe who went abroad were more likely to receive the infection from others who had the complaint; and, by being expoſed to ſudden changes of the weather, which might produce prediſpoſition, would become more liable to be attacked. In ſhort, as it prevailed equally in climates extremely different;

* Medical Communications, vol. i.
† Pringle's account, Med. Obſ. vol. vi.

different, and as its progreſs was not affected by any alteration of weather,* the ſuppoſition of its depending on the air, uninfluenced by contagion, does not appear to be well grounded. Irregularities of the atmoſphere, with reſpect to weight, moiſture, &c. aggravate the ſymptoms, but do not ſeem to occaſion the diſorder.

It is true, that by chemical changes in the component parts of the atmoſphere, many diſeaſes, for which we cannot account, may be induced. From ſome changes of this nature, the influenza may have firſt originated; but I am inclined to believe, that it is continued at the preſent day by means of contagion.†

The opinion of the contagion's reſiding in the air, is alſo liable to numerous objections. We cannot conceive it poſſible, that this contagion, by no means the moſt powerful with which we are acquainted, ſhould

* Pringle's account, Med. Obſ. vol. vi.

† Dr. *Johnſton*, in the inaugural diſſertation before referred to, makes the following remark: "The morbific matter, "exciting the diſeaſe, muſt have originated at ſome time "and ſome where; and a cauſe, like to that which gave riſe "to it in any one country, at any one point of time, might "produce it in another country, at the ſame time, under "ſimilar circumſtances." This obſervation is too extenſive to have much weight. We may, with equal propriety apply it to the ſmall-pox, meaſles, plague, and all other contagious diſeaſes: they muſt have ariſen in the firſt inſtance, independent of any contagion; and the ſame cauſe may recur in any number of countries at any time. This is equally within the bounds of poſſibility: we are, however, well convinced, that they are at preſent entirely ſupported by infection.

ſhould admit of diffuſion in a large portion of atmoſpheric fluid, without loſing its active qualities. We are, it is true, convinced by daily experience, that large quantities of the miaſma of marſhes, may be blended with the air, or held in ſolution by it, and by this mode of conveyance, exert its injurious effects on the human body.

With the ſource of this miaſma we are well acquainted, and know that continual ſupplies of it are conſtantly furniſhed by the numerous fens and marſhes with which all parts of the world abound. Yet, notwithſtanding this extenſive, this unceaſing ſupply, we never find the air ſufficiently impregnated to convey it to far and diſtant parts in all its native virulence.

The activity of the effluvia from marſhes, ſeems to be loſt by its being diffuſed through, and diluted with the innoxious particles of the atmoſphere, that in a ſhort time it becomes perfectly inert. Thus it is in the vicinity of marſhes, of low and wet ſituations, replete with pools of ſtagnant water, where the air is loaded with perpetual exhalations, the products of heat and moiſture operating on the ſurface of the earth, covered with putrid vegetable and animal ſubſtances: it is in ſuch places, and in ſuch only, that intermittents uſually appear.* The inhabitants of the

* It is not my intention to maintain that intermittents are produced only by marſh miaſma. It is, however, univerſally allowed, that this is the moſt common cauſe of them.

the adjacent country, and particularly of upland ſituations, are entirely free from all traces of the complaint.*

If a miaſma of this kind can exiſt in the air, without being injurious at any conſiderable diſtance from its ſource, though freſh quantities are conſtantly generating; it is difficult to ſuppoſe a contagion which ſhall impregnate the air, ſwiftly paſſing over places in which the diſeaſe prevails, and when thus diffuſed, preſerve ſufficient activity to infect the inhabitants of other parts over which it glides with the ſame rapidity.

The univerſality of the diſeaſe, and the ſwiftneſs of its progreſs, can be readily accounted for on the principles on which the ſpreading of other contagious complaints depends. Even the plague, one of the moſt univerſally ſpreading diſeaſes known, which has thinned the inhabitants of the moſt populous cities, and deſolated the moſt fertile and thickly inhabited countries, is, by modern obſervations, diſcovered to be entirely independent of any ſtate of the air. The infection, which is poſſeſſed of the higheſt degree of virulence, is, by mixture with the atmoſphere, rendered harmleſs in a ſhort ſpace of time; and the diſorder is only propagated by ſome direct mode of communication; in which caſe the air immediately ſurrounding *only* is noxious.†

* Sir John Pringle, page 57.
† Cullen's Pract. par. lxxxii.

That the contagion producing the plague does not operate far from its source, is proved by well attested accounts of its prevailing on one side of a street, while the other is unaffected, and of the Europeans at Constantinople escaping it, merely by confining themselves to their houses, and keeping up no intercourse with the other inhabitants.

The small-pox is another instance of a widely spreading epidemic produced only by direct communication: before the practice of inoculation was introduced, when it prevailed in any place, it raged as universally, and was diffused with as much celerity.

The whole catalogue of contagious diseases might be brought forward to the same effect; and as it is satisfactorily ascertained, that the most active do not impregnate the air to any considerable distance, a strong presumption may be formed, that the operation of catarrhal contagion is confined within similar limits. And this presumption will be further substantiated, by a consideration of the manner in which it proceeded in the late and former epidemics.

When the influenza appeared in any place, it soon became diffused universally round in all the neighboring parts, without observing any particular direction.*

Sometimes it could be traced to the arrival of persons from some place already infected.†

It

* Rush's Observ. and Inquir. vol. ii. page 256.

† Med. Trans. vol. iii. Rush's Obs. and Inquir. vol. ii. p. 248.

It appeared earlier in towns than villages---in villages than detached houſes,* and in general obſerved a regular and gradual mode of proceeding.

The circumſtance of perſons being affected ſooner, and with more violence, who were expoſed to the air, is not difficult to explain: thoſe who went abroad were more likely to receive the infection from others, who already had the complaint: by being expoſed to ſudden changes of the weather, which might induce prediſpoſition, they would alſo become more liable: while, on the contrary, if it depended on the atmoſphere, certainly this atmoſphere would find its way into the houſes with the greateſt facility.

From all theſe conſiderations, I am induced to embrace the opinion, that it is communicated in the ſame manner with other contagions, by the ſufficiently near approach to ſome perſon labouring under the diſeaſe, or ſome ſubſtance impregnated with the infection; and that the air has no agency in the buſineſs, except a *ſmall* portion of it immediately ſurrounding the ſource of the contagion, which is the medium of conveyance.† It is well known, that the halitus

* Med. Tranſ. vol. 3.

† In this manner we may, in ſome meaſure, account for contagious diſeaſes being frequently endemic in particular cities. A great number of perſons having been affected, a large proportion of clothing contains contagion, and frequently no inconſiderable quantity of the atmoſphere is impregnated with the effluvia; much of which being confined in buildings and alleys, where ventilation is but feebly

halitus arising from the body of a man in health, forms a little atmosphere round him; and it is within the limits of this atmosphere that contagion operates.

The peculiar nature and mode of operation of this, and every other contagion, is still involved in obscurity, and may be ranked among those mysteries of nature into which the researches of man have not as yet been attended with success. But, as the science of chemistry is rapidly approaching to perfection, and has already thrown great light on the theory of medicine, we may entertain a hope, that these, and several other important and obscure points, which are totally inexplicable on the present medical theories, will, at some future period, be satisfactorily elucidated and explained on chemical principles. While, therefore, we are unable to explain the cause, we must endeavour to obviate the effects; and, as experience has brought us well acquainted with them, we may expect here to meet with better success.

PROXIMATE CAUSE.

THE proximate cause appears to consist of an increased afflux of fluids to the schneiderian or mucous membrane

carried on, remains almost stationary. In confirmation of this remark it may be observed, that such complaints rage with most violence in calm weather, and are generally relieved by storms and high winds, which, on any other principle, would increase the disorder.

membrane already mentioned---proving a ſource of irritation to it, and thus producing and ſupporting the ſymptoms which conſtitute the diſeaſe.

In ſupport of this opinion it may be obſerved, that the remote cauſes all concur in occaſioning an increaſed determination to this part, and that ſuch a ſtate of it is alſo evidently pointed out by the ſymptoms.

The contagion ſeems to poſſeſs a peculiar property of cauſing this determination, probably by acting as a ſtimulus to the membrane, when inhaled in breathing, independent of its effects on the ſyſtem in general; and it is frequently aſſiſted by the concurring operation of cold.

PROGNOSIS.

IN a diſeaſe ſo rarely attended with fatality, the doctrine of prognoſis poſſeſſes no conſiderable degree of importance. It is, however, of great advantage, in the cure of diſeaſes, to have a previous knowledge of thoſe ſymptoms which may occur, as it will enable us either to prevent their appearance, or guard againſt their effects.

When the fever attending influenza is gentle; the cough not very troubleſome, and accompanied with a free expectoration; reſpiration little affected, and a diſpoſition to ſweat manifeſt, there will be no doubt of a favourable termination.

If,

If, on the contrary, the patient's health has been injured by previous diſeaſes; the febrile ſymptoms run high, or are followed ſuddenly by great debility; the cough is frequent and dry, with difficult or laborious reſpiration; and the patient is very reſtleſs and afflicted with much pain, we may expect a dangerous diſorder, and perhaps fear a fatal event. When the perſon affected appears to be diſpoſed by his form to phthiſis pulmonalis, and we have reaſon to ſuſpect tubercles already formed in his lungs; while, at the ſame time, the ſymptoms are violent, and the cough in particular continues long, we have reaſon to dread its terminating in a complaint which has as yet baffled the powers of medicine.

METHOD OF CURE.

THE fever with which influenza is attended, I am inclined to believe, is commonly mild ſynochus. I have heard of ſome inſtances in which the inflammatory ſymptoms were very great, at leaſt the remedies uſed were ſuch as could only be ſerviceable in high degrees of ſynocha; but, from the general tenor of the diſorder, and the ill ſucceſs that too frequently attended ſuch practice, I am induced to conclude that real caſes of violent ſynocha very rarely if ever occurred.

Concerning

Concerning the nature of ſynochus fever, Phyſicians entertain very different ſentiments. One party ſuppoſes that it is induced by the ſame cauſes which occaſion ſynocha; that it is in fact a real ſynocha; and that the ſymptoms of typhus which attend its latter ſtages, exiſt in conſequence of the previous inflammatory ſtate being allowed to run on to indirect debility.*

The ſupporters of the other ſide of the queſtion aſſert, that it is only a variety of typhus fever, and that the difference is produced by the cauſes of typhus operating on a ſyſtem poſſeſſed of conſiderable vigor, or what is termed a ſthenic or phlogiſtic diatheſis. I confeſs that I am rather diſpoſed to ſubſcribe to the latter opinion. In confirmation I would obſerve, that the influenza was accompanied, even at its commencement, with a degree of languor and depreſſion of ſpirits, which are never attendant on pure ſynocha fever: and though the pulſe and other ſymptoms were ſuch as denoted an increaſe of excitement, which was alſo evidenced by the ſalutary effects of debilitating remedies; yet this increaſe was no more than generally attends the firſt ſtages of ſynochus: and I think it probable, that the very near approach of it, in ſome caſes, to ſynocha, was occaſioned, in addition to the ſthenic

* This appears to be the opinion of Dr. Ruſh, of Philadelphia; and it was on this principle that he recommended blood-letting and cathartics ſo ſtrenuouſly in the late malignant fever—with a view of preventing indirect debility.

ſthenic diatheſis of the perſon affected, by the exciting cauſes of common catarrh operating at the ſame time.

To effect a cure, the excitement in the beginning of the diſeaſe is to be moderated---troubleſome ſymptoms are to be alleviated---and the ſtrength of the patient, which, toward the cloſe of the diſeaſe, ſuffers conſiderable diminution, ſhould be reſtored.

The firſt indication---to moderate the excitement, is frequently the only one neceſſary. It may be fulfilled when the complaint is but ſlight, by the uſe of the antiphlogiſtic regimen only: indeed, when moderate in degree, the influenza generally yields to confinement, reſt, and a ſpare diet. It, however, often happens that theſe are not ſufficient, and we muſt then have recourſe to more powerful means.

As it was frequently cured by ſpontaneous ſweating, ſudorifics are thus pointed out as the natural and moſt proper remedies. Emetics, either given in ſuch quantities as to produce full vomiting, or in nauſeating doſes, are of great uſe, but particularly the latter. They promote an eaſy expectoration, relieve the cough, and at the ſame time determine to the ſurface.

The emetics in common uſe are, ipecacuanha, and that preparation of antimony called tartar emetic. For the purpoſe of ſimply evacuating the contents of the ſtomach, I would prefer ipecacuanha, as it is moſt gentle; and being readily thrown out by the

act

act of vomiting, the operation is not increaſed in violence, in proportion to the quantity taken; but in influenza, the emetic tartar is moſt eligible, as it ſeems to relax the ſyſtem more powerfully, and can, with greater certainty, be given in nauſeating doſes.

Emetics, combined with opium, in the form of Dover's powder, are alſo very ſerviceable as ſudorifics, eſpecially when the warm bath is employed at the ſame time.

Warm bathing claims conſiderable merit, as it proves powerfully diaphoretic. Phyſicians have been over-cautious in the uſe of it, from an idea that the ſtimulus of the heat would over-balance the relaxing effects of the moiſture with which it is combined. By uſing a tepid bath theſe objections will be obviated.

Blood-letting has been conſiderably employed by ſome Phyſicians, and an opinion entertained, that the influenza generally and almoſt always required this evacuation. This practice may have ariſen from the inflammatory ſymptoms with which it is at firſt attended, and particularly from the ſtate of the pulſe, which was frequently full: influenced by this fulneſs, blood-letting was largely preſcribed, which inducing a great degree of debility, was too often followed by death, or a tedious recovery. In *ſome* conſtitutions, the inflammatory ſymptoms ran ſo high, that it was productive of benefit---but ſuch inſtances were rare, and might, moſt probably,

bably, have been relieved by leſs powerful and leſs dubious remedies.*

Even where the pulſe and other ſymptoms ſeemed to indicate it, the nature of the epidemic being taken into conſideration, Phyſicians of the greateſt eminence bled ſparingly and with caution. From the miſtaken opinions of ſome, fatal conſequences reſulted; and melancholy facts may be related of perſons, particularly in the ſouthern ſtates, who fell ſacrifices to the uſe of the lancet.

It may with propriety be laid down as a general rule, in contagious complaints, to be cautious of bleeding, as they rarely require, and often will not bear the evacuation.

Blood-letting may alſo have proved prejudicial, in violent attacks of the diſorder, by not being uſed till indirect debility was already formed, and thus adding *direct* debility to *indirect*. Hence the impropriety of unneceſſary delay, ſince this remedy can *only* be uſeful in the commencement of the diſeaſe, and at a more advanced period may prove highly prejudicial.

Cold, externally applied, has been recommended in catarrhal complaints, but from what has already been ſaid concerning it, in the former part of this diſſertation,

* "It was ſeldom neceſſary to take blood, ſome were relieved by it, but in general it did hurt by depreſſing the patients."—Dr. White's account of the influenza, Med. Obſ. vol. vi.—Dr. Aſh's account, ibid.—Ruſh's Obſ. vol. ii. page 259.—Medical Communications, vol. i.

dissertation, it must be evident that I am averse to the use of it. Whether it operates on the surface as an astringent or debilitant, is immaterial; for as its permanent effect is to obstruct the perspiration and determine to the lungs, it must consequently be disserviceable; and this opinion is supported by facts; for experience has proved, that, so far from being useful, an exposure to cold has brought on a relapse when the disease was almost cured.

However objectionable I may consider the external application of cold, I am of opinion that internally it may be employed with advantage. It diminishes the tone of the system, and frequently proves powerfully diaphoretic, and may with safety be given in every case of increased excitement.

Cathartics of a gentle kind, such as come under the term laxatives, are very serviceable in obviating costiveness and diminishing the superabundant excitement, and are more safe than the drastic, which are apt to prove too debilitating.

The second indication---to alleviate troublesome symptoms, is not productive of much difficulty.

When there is a considerable fixed pain in any part of the chest, which is augmented by coughing, volatile liniment or a blistering-plaister may be applied, and will generally remove it.

The cough is commonly the most troublesome symptom, and is principally to be relieved by muci-

laginous

laginous drinks, which operate on the fauces, ſheathing the parts and defending them from irritation. Oily mixtures are alſo uſed, but they are apt to grow rancid, and even if they do not, are generally diſagreeable to the ſtomach.

When there is conſiderable debility, and particularly when the patient is of advanced age, gum ammoniac, volatile alkali, and other expectorants of a ſtimulant nature, are preferable. Opium, by allaying irritation, moderates the cough, and is moſt effectual. Elixir paregoric, combined with mucilage, is found extremely uſeful, and its utility is principally owing to the opium which enters its compoſition.

With reſpect to the third indication---the ſtrength of the patient may be reſtored in moſt caſes by the uſe of a nouriſhing diet only. When we have reaſon to ſuppoſe that this will not be ſufficient, tonic remedies, as bark, bitters, &c. will prove beneficial.

Where a dangerous degree of debility takes place, the remedies found ſerviceable in typhus fever ſhould be employed.

Previous to concluding, I cannot omit acknowledging myſelf highly indebted to Dr. JOHN R. B. RODGERS, who, to many uſeful precepts which I received while under his tuition, has embraced every opportunity of adding the ſervices of a friend. The favors he

he has conferred are too important to be *soon* forgotten, and will ever intitle him to a high claim on my gratitude and esteem.

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